

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

1-4. (Cancelled)

5. (Currently amended): A method of calibrating a multi-lens camera comprising the steps of:
recording ~~over-lapping~~ overlapping images of a test pattern, said test pattern including
identifiable indicia along the edge thereof, and
determining the parameters required to seam said images into a panorama such that said
indicia coincide, whereby said parameters form calibration parameters for said
camera.

6-15. (Cancelled)

16. (New): A method for calibrating a panoramic camera system that captures overlapping single
view images that are seamed together into a panorama, the method comprising:

capturing a first single view image of a structure, the first single view image including
first indicia along an edge of the structure;

capturing a second single view image of the structure, the second single view image
including second indicia along the same edge of the structure, wherein the first
and second single view images are to be seamed together along the edge; and

adjusting one or more camera parameters to seam together the first indicia with the
second indicia.

17. (New): The method of claim 16 wherein the step of adjusting camera parameters comprises:
adjusting one or more camera parameters, attempting to make the first indicia coincide
with the second indicia.

18. (New): The method of claim 17 wherein the step of adjusting camera parameters comprises:
estimating locations of the first indicia;
estimating locations of the second indicia; and
adjusting one or more camera parameters, attempting to minimize a squared error
between the locations of the first indicia and the locations of the second indicia.

19. (New): The method of claim 17 wherein the edge of the structure contains a row of indicia, the first indicia includes the row of indicia and the second indicia includes the same row of indicia.

20. (New): The method of claim 17 wherein the edge of the structure contains two rows of indicia, the first indicia includes one of the rows of indicia and the second indicia includes the other row of indicia.

21. (New): The method of claim 20 wherein the two rows are separated by a spacing that accounts for parallax between capture of the first single view image and capture of the second single view image.

22. (New): The method of claim 16 wherein the step of adjusting camera parameters comprises:
adjusting one or more parameters for a first camera element within the panoramic camera system and adjusting one or more parameters for a second camera element within the panoramic camera system, wherein the first single view image is captured by the first camera element and the second single view image is captured by the second camera element.

23. (New): The method of claim 16 wherein at least one of the camera parameters is selected from a group consisting of offset, distortion, brightness and contrast.

24. (New): The method of claim 16 wherein at least one of the camera parameters is selected from a group consisting of heading, pitch, bank, and field of view.

25. (New): The method of claim 16 wherein the step of adjusting camera parameters comprises:
automatically locking out one or more camera parameters during adjustment of the
camera parameters.

26. (New): The method of claim 16 wherein the indicia are shaped so they assume a preselected
shape after distortion by image capture.

27. (New): The method of claim 16 wherein:

the step of capturing the first single view image comprises a first lens capturing the first
single view image, wherein the panoramic camera system comprises a multi-lens
camera with first and second lenses; and

the step of capturing the second single view image comprises the second lens capturing
the second single view image.

28. (New): The method of claim 27 wherein the lenses within the multi-lens camera are oriented
orthogonally to each other for capturing different faces of a cube.

29. (New): A computer readable medium containing a software program for implementing a
method for calibrating a panoramic camera system that captures overlapping single view images
that are seamed together into a panorama, the method comprising:

receiving a first single view image of a structure, the first single view image including
first indicia along an edge of the structure;

receiving a second single view image of the structure, the second single view image
including second indicia along the same edge of the structure, wherein the first
and second single view images are to be seamed together along the edge; and
adjusting camera parameters to seam together the first indicia with the second indicia.

30. (New): The computer readable medium of claim 29 wherein the method further comprises:
recording the adjusted camera parameters along with an identification of the panoramic camera system.

31. (New): The computer readable medium of claim 29 wherein the panoramic camera system comprises a multi-lens camera, the first single view image is captured by a first camera element within the multi-lens camera, the second single view image is captured by a second camera element within the multi-lens camera, and the method further comprises:

recording adjusted parameters for the first camera element along with an identification of the first camera element; and
recording adjusted parameters for the second camera element along with an identification of the second camera element.

32. (New): The computer readable medium of claim 29 wherein the method further comprises:
retrieving and using the adjusted camera parameters to seam together other single view images captured by the panoramic camera system.

33. (New): A calibration structure for calibrating a panoramic camera system that captures overlapping single view images that are seamed together into a panorama, the structure comprising:

an edge including indicia; and
a mount for the panoramic camera system, the mount positioned so that the panoramic camera system captures a first single view image including at least some of the indicia and also capture a second single view image including at least some of the indicia, wherein the first and second single view images are to be seamed together along the edge.

34. (New): The calibration structure of claim 33 wherein the edge includes two rows of indicia, and the mount positions the panoramic camera system so that the first single view image includes

Q' at least some of one of the rows of indicia and the second single view image includes at least some of the other row of indicia.

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